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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>16 June 2010</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,2,6,7 and 11-21</u> is/are rejected.

7) ☒ Claim(s) <u>3-5 and 8-10</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This communication is in response to Application No. 10/583,964 filed nationally on 21 June 2006 and internationally on 10 December 2004. The appeal brief presented on 16 June 2010, which presents arguments, is hereby acknowledged. Claims 1-21 are currently pending and have been examined.

Response to Appeal Brief

2.   In view of the appeal brief filed on 16 June 2010, PROSECUTION IS HEREBY REOPENED.

Applicant's request for reconsideration of the finality of the rejection of the last Office Action is persuasive-in-part and, therefore, the finality of the action is withdrawn.

New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing at the conclusion of this Action.

35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim Rejections

4.   Claims 2 and 11-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, this claim contains conflicting antecedent basis for multiple limitations and is thus indefinite. The phrase "said node for directory look-up" after "each computer that has a said data item stored thereon having, for each item stored thereon, a node of a virtual network for item look-up" conflicts with previous claim language because the node for directory look-up has already been defined within the claim. For purposes of further examination this will consider to read "said node for item look-up". The phrase "the node for directory look-up" in the subsequent (i), (ii), (iii)(a), (iii)(b), and (iii)(c) also has conflicting antecedent basis and the examiner will read as "the node for item look-up". The examiner is using claims 1 and 7 as the indicators for the correction to these antecedent basis errors, which appear to be the result of typographical errors in the amended claims filed 27 July 2009. However, the gravity of these errors requires further clarification of record.

Regarding claims 11 and 13, these claims recite the phrase "each computer" in the first stanza, which lacks antecedent basis. These claims further recite the phrase "that directory" within the second stanza, which lacks antecedent basis. These claims further recite "the same directory" in the third stanza, which lacks antecedent basis. These claims further recite "the list" in stanza 3, which lacks antecedent basis. These claims further recite "that enquiry message" in the last stanza, which has conflicting antecedent basis. Correction is required.

Regarding claim 15, this claim recites "that directory" in the first stanza, which lacks antecedent. This claim further recites "the same directory" in the second stanza, which lacks antecedent basis. Correction is required.

Regarding claim 16, this claim recites "each node" in the first stanza, which has conflicting antecedent basis issues, as it could be referring to the "computing node" or the "virtual node". This claim further recites "the secondary network" in the first stanza, which lacks antecedent basis. The examiner believes this should be "the primary network" and will treat it as such for further examination. This claim further recites "each entry" in the first stanza, which lacks antecedent basis. This claim further recites "the respective other node" in the first stanza, which lacks antecedent basis.

Regarding claim 17, this claim recites "each node" in the first stanza, which has conflicting antecedent basis issues, as it could be referring to the "computing node" or the "virtual node". This claim further recites "the primary network" in the first stanza, which lacks antecedent basis. The examiner believes this should be "the secondary network" and will treat it as such for further examination. This claim further recites "each entry" in the first stanza, which lacks antecedent basis. This claim further recites "the respective other node" in the first stanza, which lacks antecedent basis.

Regarding claim 18, this claim contains similar antecedent basis errors to that of claim 17.

Regarding claims 12, 14, 19-21, these claims inherit the rejections of their parent claim(s).

35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Response to Arguments

6.   Applicant's arguments, filed in the appeal brief dated 16 June 2010 and with

respect to rejections under 35 USC 103(a), have been fully considered and are

persuasive-in-part. New rejections may appear below, including the inter-relationships

of references cited.

Claims 1-4, 6-8, 11-12, and 16-18

Argument 1: Applicant argues that Triantafillou does not render obvious the following

limitation:

> *"in response to an enquiry message that identifies the virtual directory with which*
>
> *the node for directory look-up is associated, generating a reply message*
>
> *identifying a computer that the node for directory look-up is located on"*.

Applicant's argument is based on the premise that Triantafillou's node's reply does not

identify itself (Appeal brief: pg 24, second half).

Response 1: The examiner respectfully disagrees and finds these arguments

unpersuasive. The examiner did not rely on Triantafillou to teach that the node's reply

identifies itself. While one of ordinary skill would readily realize that communication

between network entities almost always includes a source identification, the examiner

relied upon Kwon to teach this concept.

Argument 2: Applicant argues Triantafillou fails to render obvious the following:

> *"in response to an enquiry message that identifies another of the virtual*
>
> *directories, to forward the message to another node for directory look-up of the*
>
> *network".*

Applicant's argument is based on the premise that Triantafillou only teaches forwarding

if the resulting document lookup is less than a specific number (Appeal Brief: pg 25, first

half).

Response 2: The examiner respectfully disagrees and finds these arguments

unpersuasive. Triantafillou's teachings cover the case when the target node has zero

documents in this specific category. Thus, when the target node can't find any

documents in a category, it forwards the request to another node. Thus Triantafillou

forwards the request when the request identifies "another directory".

Argument 3: Applicant argues that the combined teachings fail to render obvious the

claimed first virtual network and the claimed second virtual network (Appeal brief: pg 25,

last paragraph – pg 26, last paragraph).

Response 3: The examiner respectfully disagrees and finds these arguments

unpersuasive. The examiner sees nowhere in the claim language that recites the two

virtual networks must be different computing networks. Any network that performs the

functionality required by the alleged "first" network is the claimed first network. Any

network that performs the functionality required by the alleged claimed "second"

network is the claimed second network. However, applicant's claims make no distinction

that the virtual networks are different or that they must consist of different makeup of

nodes. In fact, applicant's specification states that virtual nodes don't actually exist, and

are just maintained data and links (Applicant's spec, lines 25-30).

Argument 4: Applicant argues that the combined teachings fail to render obvious the

claimed node for directory look-up and the claimed node for item look-up. Applicant's

arguments are based on the premise that Triantafillou's target node can't possibly be

used to teach both nodes (Appeal brief: pg 27, last two paragraph through pg 28, first

three paragraphs).

Response 4: The examiner respectfully disagrees and finds these arguments

unpersuasive. To answer applicant's question "How can a single function can be

mapped to the claim's two very different functions?", a single function can be mapped to

teach two functions if the two function's functionalities are performed by the single

function's functionality. Applicant's specification indicates that a node can be "stored

data" that is part of a process (Applicant's spec: pg 1, lines 15-20). There's no

indication in the claim language that the node for directory look-up and the node for item

look-up are separate nodes. Ergo, a node that performs both directory look-up and item

look-up (as claimed) is both a node for directory look-up and a node for item look-up.

Argument 5: Applicant argues Triantafillou fails to render obvious the claimed linking

data (Appeal brief: pg 30, last few paragraphs).

Response 5: The examiner respectfully disagrees and finds these arguments

unpersuasive. The examiner did not rely on Triantafillou to teach this part of the claim.

Argument 6: Applicant argues that Triantafillou's target node must relate to a single

activity, activity of item-lookup or directory look-up, and thus Triantafillou can't possibly

render both activities obvious (Appeal brief: pg 31, first couple paragraphs).

Response 6: The examiner respectfully disagrees and finds these arguments

unpersuasive. If there is a claimed node for item look-up and a node for directory look-

up, and there is a node in the prior art that performs both directory and item look-up,

then the prior art's node is both the node for item look-up and directory look-up, despite

applicant's assertion that a virtual node "must" be related to one claimed activity.

Argument 7: Applicant argues that Kwon does not teach a reply message identifying

the computer (Appeal brief: pg 31, last 3 paragraphs - pg 32, last paragraph).

Response 7: The examiner respectfully disagrees and finds these arguments

unpersuasive. Kwon states, *"If the file with the matching digest exists, the supernode*

returns the destination node address", in reference to performing a lookup for a file

(Kwon: under Figure 3, RHS, first paragraph).

Argument 8: Applicant argues it would not be obvious to combine the step-by-step searching method and the 3-step searching method of Kwon, because even Kwon, an alleged expert in the field, didn't think to combine the approaches.

Response 8: The examiner respectfully disagrees and finds these arguments unpersuasive. Kwon explicitly combines the 3 searching methods. See Kwon, Figure 3. And Under figure 3, RHS, last 2 paragraphs which states *"Both [1 step and 3 step] methods are subject to failure in case that … . The step-by-step method is used as a backup"*.

Argument 9: Applicant argues that Adar does not teach receiving a query identifying a directory and an item in the directory, nor sending a query message back to the computer identified in the reply message.

Response 9: The examiner respectfully disagrees and finds these arguments unpersuasive. Applicant's relentless piecemeal analysis of the references throughout their entire arguments is generally unpersuasive. Of course Adar doesn't teach identifying a directory in a query, Kwn and Triantafillou were relied on for that aspect of the claimed invention. Adar does teach what it was relied upon for, and that was requesting the item based on a reply identifying the computer maintaining the item, and receiving the reply containing the item (Adar: pg 5, get/push messages).

Applicant's arguments are ultimately unpersuasive and, therefore, the rejections of these claims are hereby maintained.

Claims 5, 9-10, and 13-15

Applicant's arguments are persuasive, and, therefore, the rejections of these claims are

withdrawn. However, new rejections may appear below.

Claims 19-21

Applicant argues these claims conditionally based upon the arguments of their parent

claim(s). Applicant's arguments are ultimately unpersuasive and, therefore, the

rejections of these claims are hereby maintained.

Claim Rejections

7.   Claims 1-2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kwon et al ("An efficient peer-to-peer file sharing exploiting hierarchy and

asymmetry", 2003); and in further view of Adar et al ("Free Riding on Gnutella", 2000).

Regarding claim 1, Kwon teaches a distributed computer system comprising a plurality

of computers (Kwon: abstract), comprising:

        a plurality of computers, each storing data items, each data item being assigned

to one of a plurality of virtual directories (varying SKCs/AKCs of the supernodes) (Kwon:

section 3.1, paragraphs 3-4; provide each item is published to a file location directory

maintained by a supernode with the SKC/AKC covering the file key; See also section

3.2, paragraphs 1-3, which provide the file directory record is not propagated to all

supernodes, only three which cover key using SKC/AKC);

each computer that has a said data item thereon having at least one node of a

virtual network for directory look-up (Kwon: section 2, specifically paragraph 3), said

node for directory look-up comprising:

data identifying that one of the plurality of virtual directories with which the

node for directory look-up is associated (Kwon: section 2, paragraph 3, prelookup

table; section 3.2, under Fig 3, RHS, pre-lookup table provides supernodes

maintain data identifying whether the directory, ie SKC, is managed by them);

linking data comprising addresses of other such nodes for directory look-

up (Kwon: section 2, routing table; section 3.2, under Fig 3, RHS; on pre_lookup

failure, forward to local SKC supernode provides maintaining local SKC

supernode addresses; See also bottom paragraph on RHS under Fig 3, provides

SNs maintain address info about local SNs and RSNs);

software operable, in response to an enquiry message that identifies

another of the virtual directories forwarding the message to another node for

directory look-up of the nework (Kwon: section 3.2, under Fig 3, RHS; on

pre_lookup failure, forward to local SKC supernode that covers that key);

software operable, in response to an enquiry message that identifies the

virtual directory with which the node for directory look-up is associated,

generating a reply message identifying a computer that the node for directory

look-up is located on (Kwon: section 3.2, under Fig 3, RHS, on pre-lookup

success, return destination address of node maintaining the file; This destination

address will be the directory look-up address if the directory look-up computer is

maintaining the file, see below);

each computer that has a said data item stored thereon having, for each item

stored thereon, a node of a virtual network for item look-up (Kwon: section 2, specifically

paragraph 3), said node for item look-up comprising:

data identifying the item with which the node for item look-up is associated

(Kwon: section 2, paragraph 3, lookup table);

linking data comprising addresses of other such nodes for item look-up

each associated with an item assigned to the same virtual directory, whereby

said linking data together define a plurality of virtual networks for item look-up,

each of which networks corresponds to a respective different virtual directory

(Kwon: section 2, paragraph 3, routing table; see also section 3.1, in entirety and

Figure 2; Each key coverage area is considered a "directory");

software operable in response to an enquiry message that identifies

another of the items, forwarding the message to another node for item

look-up of the network (Kwon: section 3.2, under Fig 3, RHS, on lookup

failure forward to local SKC supernode);

and

wherein at least one computer has retrieval means responsive to receipt of a

query identifying a directory and an item within that directory (Kwon: section 3.2, under

Fig 3, last paragraph LHS and onto RHS provides message contains file name, file key,

and file id, which identifies both the file and key coverage area, ie directory) to

> send to a node of the virtual network for directory look-up an enquiry
>
> message identifying the directory (Kwon: section 3.2, under Fig 3, last paragraph
>
> LHS and onto RHS provides query message contains file name, file key, and file
>
> id, which identifies the key coverage area, ie directory).

Kwon does teach the following:

> wherein the node for item lookup comprises:
>
> > software operable in response to an enquiry message that identifies the
> >
> > item with which the node for item-look is associated, generating a reply message
> >
> > including the identified item;
>
> wherein the at least one computer is configured to:
>
> > upon receipt of a reply message thereto, to send to the computer identified
> >
> > in the reply message an enquiry message identifying the item; or
> >
> > receive the reply message containing the item.

Adar, in a similar field of endeavor, teaches:

> wherein the node for item lookup comprises:
>
> > software operable in response to an enquiry message that identifies the
> >
> > item with which the node for item-look is associated, generating a reply message
> >
> > including the identified item (Adar: pg 5, "get/push messages" section);
>
> wherein the at least one computer is configured to:

upon receipt of a reply message thereto, to send to the computer identified

in the reply message an enquiry message identifying the item (Adar: pg 5,

"get/push message" upon receipt of a query response);

receive the reply message containing the item (Adar: pg 5, "get/push

message" provides the message is received).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Adar for subsequently requesting the

items once the hosting node was found. The teachings of Adar, when implemented in

the Kwon system, will allow one of ordinary skill in the art to request a file after receiving

a message, from a supernode, identifying its location. One of ordinary skill in the art

would be motivated to utilize the teachings of Adar in the Kwon system in order to

ultimately obtain the target file.

Regarding claim 2, this claim contains limitations found within that of claim 1, and

wherein the node for item look-up further comprises:

software operable in response to an enquiry message that identifies the item

which the node for item look-up is associated, generating a reply message identifying

the computer that the node for item look-up is located on (Adar: pg 5, "get/push

messages" section provides for returning the file in response to a query; pg 8, 3rd

paragraph provides that communications use IP, which requires source address

information, and thus a reply including the file would also "identify the computer that the

node for item look-up is located on");

software operable in response to a request that identifies the item with which the

node for item look-up is associated, generating a reply message including the item

(Adar: pg 5, "get/push messages" provides the item is received); and

wherein at least one computer is further configured to, upon receipt of a reply

message thereto, to send to the computer identified in the reply message a message

requesting the item ("Adar: pg 5, "get/push messages").

Regarding claim 6, this claim contains limitations found within that of claim 1, and the

same rationale of rejection is used, where applicable.

Regarding claim 7, this claim contains limitations found within that of claim 2, and the

same rationale of rejection is used, where applicable.

8.   Claims 11-12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Triantafillou et al (Towards High Performance Peer-To-Peer Content and Resource

Sharing Systems), and in further view of Adar (Free Riding on Gnutella).

Regarding claim 11, Triantafillou teaches comprising a plurality of computer nodes,

wherein each computer stores data items, each data item being assigned to one of a

plurality of virtual directories (Triantafillou: sections 3.2-3.3 provides for nodes

maintaining documents, each within a category), the network having:

first retrieval means responsive to input of a directory name to identify a

computing node having items in that directory (Triantafillou: sections 3.2-3.3, requesting

node steps b and c provides for identifying both a cluster id and a node id via the DCRT

and NRT based on a category lookup);

second retrieval means connected to receive an address identified by the first

retrieval means and operable in response thereto to identify further computing nodes

having items in the same directory (Triantafillou: sections 3.2-3.3 provide for cluster to

node IDing based on same category; target node step b ids other cluster nodes and

forwards query to other nodes);

wherein each computing node having items in a given directory has associated

with it a data storage area for containing addresses for other computing nodes having

items in the same directory, and identifies address of the other computing nodes having

items in the same directory (Triantafillou: sections 3.2-3.3 provide for the DCRT and

NRT, which map cluster id to node ids, see target node step b for same category);

and wherein the second retrieval means *is operable* to send an enquiry message

to the node identified by the first retrieval means and upon receipt of a response to

iteratively send enquiry messages to addresses, thereby identifying a plurality of

computing nodes having items in the directory in question (Triantafillou: sections 3.2-

3.3, target node steps b and c provide for iteratively requesting to same directory

nodes).

Triantafillou does not teach wherein a node is responsive to enquiry messages to

return a message containing an identified address; or

wherein the identified address is contained in the response to a first enquiry message or in a response to a subsequent enquiry message.

Adar, in a similar field of endeavor, teaches wherein a node is responsive to enquiry messages to return a message containing an identified address (Adar: pg 5, "Query Response Messages" section); and

wherein the identified address is contained in the response to a first enquiry message or in a response to a subsequent enquiry message (Adar: pg 5, "Query Messages" provide multiple queries are flooded; "Query Response Messages" provide the response has the address).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Adar for subsequently requesting the items once the hosting node was found. The teachings of Adar, when implemented in the Triantafillou system, will allow one of ordinary skill in the art to request a file after receiving a message, from the target node, that identifies the final document result set. One of ordinary skill in the art would be motivated to utilize the teachings of Adar in the Triantafillou system in order to ultimately obtain a target file.

Regarding claim 12, the Triantafillou/Adar system teaches wherein the retrieval means *is operable* to retrieve from each of said identified plurality of computing nodes a list of items stored thereon, and to compile a composite list of said items (Triantafillou: section 3.3, target node step c provides a document list is generated).

Regarding claim 17, the Triantafillou/Adar system teaches wherein the second retrieval

means is formed by a secondary network of virtual nodes (categorical cluster), each

node being defined by a list of links (node ids) to other nodes of the secondary network,

each entry in the list including an address of the respective other node (Triantafillou:

section 3.2, NRT for provides each node maps cluster-id to node-id set; Adar: pgs 4-5

for nodes having addresses); and

wherein each node includes means responsive to receipt of a request message

to generate a reply message containing the addresses of the list (Triantafillou: section

3.2 provides for cluster to node ID mapping).

9.   Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Triantafillou et al (Towards High Performance Peer-To-Peer Content and Resource

Sharing Systems); in view of Adar (Free Riding on Gnutella); and in further view of

Christensen et al (US 2002/0112008).

Regarding claim 15, the Triantafillou/Adar system teaches wherein each computer

having retrieval means includes:

first retrieval means responsive to input of a directory name to identify a

computing node having items in that directory (Triantafillou: sections 3.2-3.3, requesting

node steps b and c provides for identifying both a cluster id and a node id via the DCRT

and NRT based on a category lookup);

second retrieval means connected to receive an address identified by the first

retrieval means and operable in response thereto to identify further computing nodes

having items in the same directory (Triantafillou: sections 3.2-3.3 provide for cluster to

node IDing based on same category; target node step b ids other cluster nodes and

forwards query to other nodes).

The Triantafillou/Adar system does not teach wherein the directory is a

subdirectory assigned to a directory; and

wherein some of said directories are assigned, as subdirectories, to another of

said directories.

Christenson, in a similar field of endeavor, teaches wherein the directory is a

subdirectory assigned to a directory (Christenson: [0314]-[0316]); and

wherein some of said directories are assigned, as subdirectories, to another of

said directories (Christenson: [0314]-[0316]).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Christenson for having subdirectories.

The teachings of Christenson, when implemented in the Triantafillou/Adar system, will

allow one of ordinary skill in the art to implement sub-categories to categories. One of

ordinary skill in the art would be motivated to utilize the teachings of Christenson in the

Triantafillou/Adar system in order to implement a commonly-used subdirectory concept

to the system.

Regarding claim 13, this claim contains limitations found within that of claim 15 and the

same rationale of rejection is used, where applicable.

Regarding claim 14, this claim contains limitations found within that of claim 12 and the

same rationale of rejection is used, where applicable.

10.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Triantafillou et al (Towards High Performance Peer-To-Peer Content and Resource

Sharing Systems); in view of Adar (Free Riding on Gnutella); and in further view of

Yemini et al (US 2002/0163889 A1).

Regarding claim 21, the Triantafillou/Adar system does not explicitly teach adding and

removing addresses of neighboring nodes to routing lists as claimed.

        Yemini, in a similar field of endeavor, teaches wherein each node of a secondary

network includes processing means programmed to perform the following operations:

        receiving messages (Yemini: [0035]);

        responding to messages requesting information about the contents of the list

(Yemini: [0037]);

        complying with received requests to remove an address from the list and

insertion of another address into the list (Yemini: [0037]);

        in response to receipt of a message requesting a link between the node and a

second node (Yemini: [0037]);

generating a message to the second node requesting information about the

contents of its list (Yemini: [0072]-[0075]);

determining whether both the first node and second node has in each case a

number of addresses in its list which is less than the predetermined number (Yemini:

[0068] specifies nodes exchange only the best labels/neighbors);

in the event that this condition is satisfied, inserting into its list the address of the

second node and generating a message to the second node requesting the second

node to add to its list the address of the node (Yemini: [0069]);

in the event that this condition is not satisfied, determining whether the node has

a number of addresses in its list which is at least two less than the predetermined

number, and if so- selecting from the list of the second node the address of a third node;

inserting the address of the second node into the list of the first node and inserting the

address of the third node into the list of the first node; generating a message to the

second node requesting the removal of the address of the third node from the list of the

second node and insertion of the address of the node; generating a message to the

third node requesting the removal of the address of the second node from the list of the

third node and insertion of the address of the node. (Yemini: [0098]-[0100] specifies that

when a node moves, the address are removed from the adjacent nodes it leaves and

the address is added to the adjacent nodes it moves to; See also Figure 7)

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the teachings of Yemini for managing node links in the

fashion stated. The teachings of Yemini, when implemented in the Triantafillou/Adar

system, will allow one of ordinary skill in the art to dynamically manage node links in a

distributed network as specified. One of ordinary skill in the art would be motivated to

utilize the teachings of Yemini in order to allow the network to self-adjust when nodes

are added or removed in real-time.

Allowable Subject Matter

11.   Claims 3-5 and 8-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12.   Claims 16-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Citation of Pertinent Prior Art

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

         a.   Adya et al ("FARSITE: Federated Available and Reliable Storage for an Incompletely Trusted Environment", 2002) discloses a distributed file system with directory look-up support.

         b.   Kwon et al ("BYPASS: Topology-Aware Lookup overlay for DHT-based P2P File Locating Services", 2004) discloses system with an overlay network for directory look-up and a second overlay network for file lookup, however is not prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY NICKERSON whose telephone number is (571)270-3631. The examiner can normally be reached on M-Th, 9:00am - 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Asad Nawaz can be reached on (571)272-3988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. N./
Examiner, Art Unit 2442
/John Follansbee/
Supervisory Patent Examiner, Art Unit 2451